

Notice of Allowability

Application No.

09/778,675

Examiner

James S. Wozniak

Applicant(s)

MACAUSLAN ET AL

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/26/2005.
2. ☒ The allowed claim(s) is/are 3-9 (now 2, 1, 3-5, 7, 6 respectively).
3. ☒ The drawings filed on 07 February 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

W. R. YOUNG
PRIMARY EXAMINER

DETAILED ACTION

Response to Amendment

1. In response to the office action from 7/28/2004, the applicant has submitted an amendment, filed 1/26/2005, amending Claims 3-6, while canceling claims 1-2, adding claim 9, and arguing to traverse the art rejection based on the limitation regarding the setting of portions of voiced components to a zero value (*Amendment, Page 7*). Due to the amendments, applicant's arguments, and reasons given below, Claims 3-9 are allowable over the prior art of record.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with David Thibodeau (*Reg. No. 31,671*) on 4/21/2005.

3. The application has been amended as follows:

Claim 4, Line 27- change "process acoustic sample stream" to --processed acoustic sample stream--.

Claim 8, Line 1- change "claim 6" to --claim 9--.

Allowable Subject Matter

4. **Claims 3-9** are allowable over the prior art of record.

5. The following is an examiner's statement of reasons for allowance:

With respect to **Claims 4 and 9**, the prior art of record does not specifically teach or explicitly suggest a method for enhancing electrolaryngeal speech from an artificial larynx at a digital signal processor connected to a telephone device, wherein an inter-word segment ("buzzing" sound associated with pauses in electrolaryngeal speech) is detected based on a total power of an electrolaryngeal speech segment falling below a predetermined average power threshold, and upon detection, setting the signal value of such an inter-word segment to zero. Although Cole et al ("Application of Noise Reduction techniques for Alaryngeal Speech Enhancement," 1997) teaches an inter-word pause suppression process using spectral subtraction, the use of spectral subtraction, as is well known in the art, involves subtracting an average noise level. If a noise level for a particular segment were above an average level, spectral subtraction would still leave a remaining noise portion, and thus would not be considered setting a inter-word noise segment signal value to zero.

The prior art of record also does not teach or specifically suggest the above noted features in combination with electrolaryngeal speech pre-processing involving digitizing, feature extraction, a discrete Fourier transform, and an inverse Fourier transform. Furthermore, the

present invention detects voiced and unvoiced components, and subtracts voiced components. Prior to determining inter-word segments the present invention filters a voiced component, which is also not specifically taught or explicitly suggested by the prior art of record in combination with the above noted features.

Claims 3 and 5-8 further limit allowed independent claims, and thus, are also allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632 and email is James.Wozniak@uspto.gov. The examiner can normally be reached on Mondays-Fridays, 8:30-4:30.

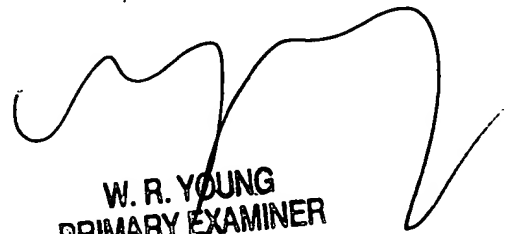
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached at (571) 272-7582. The fax/phone number for the Technology Center 2600 where this application is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology center receptionist whose telephone number is (703) 306-0377.

James S. Wozniak
5/26/2005



W. R. YOUNG
PRIMARY EXAMINER